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L9: Entry 1 of 46

File: USPT

Mar 20, 2001

US-PAT-NO: 6204922

DOCUMENT-IDENTIFIER: US 6204922 B1

TITLE: Rapid and accurate thin film measurement of individual layers in a multi-layered or patterned sample

DATE-ISSUED: March 20, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chalmers; Scott A.	La Jolla	CA	N/A	N/A

US-CL-CURRENT: 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	RMK	Draw Desc	Image
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☐ 2. Document ID: US 6201253 B1

L9: Entry 2 of 46

File: USPT

Mar 13, 2001

US-PAT-NO: 6201253

DOCUMENT-IDENTIFIER: US 6201253 B1

TITLE: Method and apparatus for detecting a planarized outer layer of a semiconductor wafer with a confocal optical system

DATE-ISSUED: March 13, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Allman; Derryl D. J.	Colorado Springs	CO	N/A	N/A
Daniel; David W.	Divide	CO	N/A	N/A
Gregory; John W.	Colorado Springs	CO	N/A	N/A

US-CL-CURRENT: 250/559.27; 250/559.4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	RMK	Draw Desc	Image
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☐ 3. Document ID: US 6187110 B1

L9: Entry 3 of 46

File: USPT

Feb 13, 2001

US-PAT-NO: 6187110  
DOCUMENT-IDENTIFIER: US 6187110 B1

TITLE: Device for patterned films

DATE-ISSUED: February 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan	Albany	CA	N/A	N/A

US-CL-CURRENT: 148/33.2; 257/797, 438/455

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 4. Document ID: US 6172756 B1

L9: Entry 4 of 46

File: USPT

Jan 9, 2001

US-PAT-NO: 6172756  
DOCUMENT-IDENTIFIER: US 6172756 B1

TITLE: Rapid and accurate end point detection in a noisy environment

DATE-ISSUED: January 9, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chalmers; Scott A.	La Jolla	CA	N/A	N/A
Geels; Randall S.	San Diego	CA	N/A	N/A

US-CL-CURRENT: 356/630; 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 5. Document ID: US 6162705 A

L9: Entry 5 of 46

File: USPT

Dec 19, 2000

US-PAT-NO: 6162705  
DOCUMENT-IDENTIFIER: US 6162705 A

TITLE: Controlled cleavage process and resulting device using beta annealing

DATE-ISSUED: December 19, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan W.	Albany	CA	N/A	N/A

US-CL-CURRENT: 438/478; 438/507

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMMC	Draw Desc	Image
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☐ 6. Document ID: US 6159825 A

L9: Entry 6 of 46

File: USPT

Dec 12, 2000

US-PAT-NO: 6159825

DOCUMENT-IDENTIFIER: US 6159825 A

TITLE: Controlled cleavage thin film separation process using a reusable substrate

DATE-ISSUED: December 12, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan W.	Albany	CA	N/A	N/A

US-CL-CURRENT: 438/460; 438/428, 438/459

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMMC	Draw Desc	Image
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☐ 7. Document ID: US 6155909 A

L9: Entry 7 of 46

File: USPT

Dec 5, 2000

US-PAT-NO: 6155909

DOCUMENT-IDENTIFIER: US 6155909 A

TITLE: Controlled cleavage system using pressurized fluid

DATE-ISSUED: December 5, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan	Albany	CA	N/A	N/A

US-CL-CURRENT: 451/39; 451/1, 451/2, 451/40

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMMC	Draw Desc	Image
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☐ 8. Document ID: US 6119510 A

L9: Entry 8 of 46

File: USPT

Sep 19, 2000

US-PAT-NO: 6119510  
DOCUMENT-IDENTIFIER: US 6119510 A

TITLE: Process for determining characteristics of suspended particles

DATE-ISSUED: September 19, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Carasso; Melanie	Chatham	NJ	N/A	N/A
Patel; Sanjay	New Providence	NJ	N/A	N/A
Valdes; Jorge Luis	Branchburg	NJ	N/A	N/A
White; Christopher Alan	Basking Ridge	NJ	N/A	N/A

US-CL-CURRENT: 73/61.75; 356/437, 356/438, 356/441, 356/442, 73/24.02, 73/24.03

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	RMWC	Draw Desc	Image
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☐ 9. Document ID: US 6114706 A

L9: Entry 9 of 46

File: USPT

Sep 5, 2000

US-PAT-NO: 6114706  
DOCUMENT-IDENTIFIER: US 6114706 A

TITLE: Method and apparatus for predicting process characteristics of polyurethane pads

DATE-ISSUED: September 5, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meikle; Scott G.	Boise	ID	N/A	N/A
Hudson; Guy F.	Boise	ID	N/A	N/A

US-CL-CURRENT: 250/461.1; 250/458.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	RMWC	Draw Desc	Image
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☐ 10. Document ID: US 6110752 A

L9: Entry 10 of 46

File: USPT

Aug 29, 2000

US-PAT-NO: 6110752  
DOCUMENT-IDENTIFIER: US 6110752 A

TITLE: Optical techniques of measuring endpoint during the processing of material layers in an optically hostile environment

DATE-ISSUED: August 29, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Litvak; Herbert E.	Cupertino	CA	N/A	N/A

US-CL-CURRENT: 438/8; 438/16, 438/692, 438/7

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWC	Draw. Desc	Image
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L9: Entry 11 of 46

File: USPT

Jun 20, 2000

US-PAT-NO: 6077452

DOCUMENT-IDENTIFIER: US 6077452 A

TITLE: Optical techniques of measuring endpoint during the processing of material layers in an optically hostile environment

DATE-ISSUED: June 20, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Litvak; Herbert E.	Cupertino	CA	N/A	N/A

US-CL-CURRENT: [216/85](#); [216/88](#), [216/89](#), [438/692](#), [438/693](#), [438/7](#), [438/8](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	MMOC	Draw Desc	Image
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☐ 12. Document ID: US 6074287 A

L9: Entry 12 of 46

File: USPT

Jun 13, 2000

US-PAT-NO: 6074287

DOCUMENT-IDENTIFIER: US 6074287 A

TITLE: Semiconductor wafer polishing apparatus

DATE-ISSUED: June 13, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Miyaji; Akira	Tokyo	N/A	N/A	JPX
Arai; Takashi	Saitama-ken	N/A	N/A	JPX
Yagi; Takeshi	Yokohama	N/A	N/A	JPX

US-CL-CURRENT: [451/287](#); [451/533](#), [451/6](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	MMOC	Draw Desc	Image
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☐ 13. Document ID: US 6074517 A

L9: Entry 13 of 46

File: USPT

Jun 13, 2000

US-PAT-NO: 6074517  
DOCUMENT-IDENTIFIER: US 6074517 A

TITLE: Method and apparatus for detecting an endpoint polishing layer by transmitting infrared light signals through a semiconductor wafer

DATE-ISSUED: June 13, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Taravade; Kunal N.	Colorado Springs	CO	N/A	N/A

US-CL-CURRENT: 156/345; 250/338.1, 451/66

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 14. Document ID: US 6028669 A

L9: Entry 14 of 46

File: USPT

Feb 22, 2000

US-PAT-NO: 6028669  
DOCUMENT-IDENTIFIER: US 6028669 A

TITLE: Signal processing for in situ monitoring of the formation or removal of a transparent layer

DATE-ISSUED: February 22, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tzeng; Huey M.	San Jose	CA	N/A	N/A

US-CL-CURRENT: 356/504; 356/357, 356/360

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 15. Document ID: US 6013567 A

L9: Entry 15 of 46

File: USPT

Jan 11, 2000

US-PAT-NO: 6013567  
DOCUMENT-IDENTIFIER: US 6013567 A

TITLE: Controlled cleavage process using pressurized fluid

DATE-ISSUED: January 11, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan	Albany	CA	N/A	N/A

US-CL-CURRENT: 438/515; 438/800

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 16. Document ID: US 6010579 A

L9: Entry 16 of 46

File: USPT

Jan 4, 2000

US-PAT-NO: 6010579

DOCUMENT-IDENTIFIER: US 6010579 A

TITLE: Reusable substrate for thin film separation

DATE-ISSUED: January 4, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan W.	Albany	CA	N/A	N/A

US-CL-CURRENT: 148/33.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWMC	Draw Desc	Image
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☐ 17. Document ID: US 5998298 A

L9: Entry 17 of 46

File: USPT

Dec 7, 1999

US-PAT-NO: 5998298

DOCUMENT-IDENTIFIER: US 5998298 A

TITLE: Use of chemical-mechanical polishing for fabricating photonic bandgap structures

DATE-ISSUED: December 7, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fleming; James G.	Albuquerque	NM	N/A	N/A
Lin; Shawn-Yu	Albuquerque	NM	N/A	N/A
Hetherington; Dale L.	Albuquerque	NM	N/A	N/A
Smith; Bradley K.	Edgewood	NM	N/A	N/A

US-CL-CURRENT: 438/692; 257/17, 359/344, 438/690, 438/691, 438/800

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWMC	Draw Desc	Image
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☐ 18. Document ID: US 5993289 A

L9: Entry 18 of 46

File: USPT

Nov 30, 1999

US-PAT-NO: 5993289  
DOCUMENT-IDENTIFIER: US 5993289 A

TITLE: Methods for the in-process detection of workpieces in a CMP environment

DATE-ISSUED: November 30, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Allen; Robert F.	Gilbert	AZ	N/A	N/A
Holzapfel; Paul	Chandler	AZ	N/A	N/A
Bartels; Anthony L.	Phoenix	AZ	N/A	N/A
Lin; Warren	Fremont	CA	N/A	N/A

US-CL-CURRENT: 451/5; 451/41, 451/6, 451/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 19. Document ID: US 5994207 A

L9: Entry 19 of 46

File: USPT

Nov 30, 1999

US-PAT-NO: 5994207  
DOCUMENT-IDENTIFIER: US 5994207 A

TITLE: Controlled cleavage process using pressurized fluid

DATE-ISSUED: November 30, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan	Albany	CA	N/A	N/A

US-CL-CURRENT: 438/515; 438/455

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 20. Document ID: US 5985742 A

L9: Entry 20 of 46

File: USPT

Nov 16, 1999

US-PAT-NO: 5985742  
DOCUMENT-IDENTIFIER: US 5985742 A

TITLE: Controlled cleavage process and device for patterned films

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henley; Francois J.	Los Gatos	CA	N/A	N/A
Cheung; Nathan	Albany	CA	N/A	N/A

US-CL-CURRENT: 438/515; 438/526

US-PAT-NO: 5640242

DOCUMENT-IDENTIFIER: US 5640242 A

TITLE: Assembly and method for making in process thin film thickness measurments

DATE-ISSUED: June 17, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Boyle; Martin Patrick	Peekskill	NY	N/A	N/A
Panner; John Charles	Underhill	VT	N/A	N/A
Sandwick; Thomas Edwin	Hopewell Junction	NY	N/A	N/A
van Kessel; Theodore Gerard	Millbrook	NY	N/A	N/A
Wickramasinghe; Hemantha Kumar	Chappaqua	NY	N/A	N/A

US-CL-CURRENT: 356/632; 356/357, 356/503

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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L9: Entry 21 of 46

File: USPT

Oct 5, 1999

US-PAT-NO: 5961369

DOCUMENT-IDENTIFIER: US 5961369 A

TITLE: Methods for the in-process detection of workpieces with a monochromatic light source

DATE-ISSUED: October 5, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bartels; Anthony L.	Phoenix	AZ	N/A	N/A
Allen; Robert F.	Gilbert	AZ	N/A	N/A
Holzapfel; Paul	Chandler	AZ	N/A	N/A
Lin; Warren	Fremont	CA	N/A	N/A

US-CL-CURRENT: 451/5; 451/6, 451/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ **22. Document ID: US 5958148 A**

L9: Entry 22 of 46

File: USPT

Sep 28, 1999

US-PAT-NO: 5958148

DOCUMENT-IDENTIFIER: US 5958148 A

TITLE: Method for cleaning workpiece surfaces and monitoring probes during workpiece processing

DATE-ISSUED: September 28, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Holzapfel; Paul	Tempe	AZ	N/A	N/A
Yednak, III; Andrew	Phoenix	AZ	N/A	N/A
Natalicio; John	Los Angeles	CA	N/A	N/A
Goudie; Chad	Chandler	AZ	N/A	N/A

US-CL-CURRENT: 134/18; 134/113, 134/2, 134/26, 134/34, 134/37, 216/38, 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 23. Document ID: US 5949927 A

L9: Entry 23 of 46

File: USPT

Sep 7, 1999

US-PAT-NO: 5949927

DOCUMENT-IDENTIFIER: US 5949927 A

TITLE: In-situ real-time monitoring technique and apparatus for endpoint detection  
of thin films during chemical/mechanical polishing planarization

DATE-ISSUED: September 7, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tang; Wallace T. Y.	Warren	NJ	07059	N/A

US-CL-CURRENT: 385/12; 250/227.28, 385/115, 385/25, 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 24. Document ID: US 5948203 A

L9: Entry 24 of 46

File: USPT

Sep 7, 1999

US-PAT-NO: 5948203

DOCUMENT-IDENTIFIER: US 5948203 A

TITLE: Optical dielectric thickness monitor for chemical-mechanical polishing  
process monitoring

DATE-ISSUED: September 7, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Shih-Ming	Hsin-Chu	N/A	N/A	TWX

US-CL-CURRENT: 156/345; 451/287

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 25. Document ID: US 5911619 A

L9: Entry 25 of 46

File: USPT

Jun 15, 1999

US-PAT-NO: 5911619

DOCUMENT-IDENTIFIER: US 5911619 A

TITLE: Apparatus for electrochemical mechanical planarization

DATE-ISSUED: June 15, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Uzoh; Cyprian Emeka	Hopewell Junction	NY	N/A	N/A
Harper; James McKell Edwin	Yorktown Heights	NY	N/A	N/A

US-CL-CURRENT: 451/5; 451/287

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 26. Document ID: US 5899792 A

L9: Entry 26 of 46

File: USPT

May 4, 1999

US-PAT-NO: 5899792

DOCUMENT-IDENTIFIER: US 5899792 A

TITLE: Optical polishing apparatus and methods

DATE-ISSUED: May 4, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yagi; Takeshi	Yokohama	N/A	N/A	JPX

US-CL-CURRENT: 451/6; 451/287, 451/41

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 27. Document ID: US 5891352 A

L9: Entry 27 of 46

File: USPT

Apr 6, 1999

US-PAT-NO: 5891352

DOCUMENT-IDENTIFIER: US 5891352 A

TITLE: Optical techniques of measuring endpoint during the processing of material layers in an optically hostile environment

DATE-ISSUED: April 6, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Litvak; Herbert E.	Cupertino	CA	N/A	N/A

US-CL-CURRENT: 216/85; 216/88

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 28. Document ID: US 5890951 A

L9: Entry 28 of 46

File: USPT

Apr 6, 1999

US-PAT-NO: 5890951  
DOCUMENT-IDENTIFIER: US 5890951 A

TITLE: Utility wafer for chemical-mechanical planarization

DATE-ISSUED: April 6, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vu; Cuong van	San Jose	CA	N/A	N/A

US-CL-CURRENT: 451/56; 451/444

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 29. Document ID: US 5880039 A

L9: Entry 29 of 46

File: USPT

Mar 9, 1999

US-PAT-NO: 5880039

DOCUMENT-IDENTIFIER: US 5880039 A

TITLE: Method for forming interlayer insulating film of a semiconductor device

DATE-ISSUED: March 9, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lee; Sahng Kyoo	Kyoungki-do	N/A	N/A	KRX

US-CL-CURRENT: 438/763; 438/624, 438/631, 438/633, 438/692, 438/698, 438/760

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 30. Document ID: US 5872633 A

L9: Entry 30 of 46

File: USPT

Feb 16, 1999

US-PAT-NO: 5872633

DOCUMENT-IDENTIFIER: US 5872633 A

TITLE: Methods and apparatus for detecting removal of thin film layers during planarization

DATE-ISSUED: February 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Holzapfel; Paul	Chandler	AZ	N/A	N/A
Schlueter; James	Phoenix	AZ	N/A	N/A
Karlsruud; Chris	Chandler	AZ	N/A	N/A
Lin; Warren	Fremont	CA	N/A	N/A

US-CL-CURRENT: 356/630; 250/559.27, 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KVMC	Draw Desc	Image
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L9: Entry 31 of 46

File: USPT

Oct 20, 1998

US-PAT-NO: 5823853

DOCUMENT-IDENTIFIER: US 5823853 A

TITLE: Apparatus for the in-process detection of workpieces with a monochromatic light source

DATE-ISSUED: October 20, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bartels; Anthony L.	Phoenix	AZ	N/A	N/A
Allen; Robert F.	Gilbert	AZ	N/A	N/A
Holzapfel; Paul	Chandler	AZ	N/A	N/A
Lin; Warren	Fremont	CA	N/A	N/A

US-CL-CURRENT: 451/5; 451/6, 451/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ **32. Document ID: US 5807165 A**

L9: Entry 32 of 46

File: USPT

Sep 15, 1998

US-PAT-NO: 5807165

DOCUMENT-IDENTIFIER: US 5807165 A

TITLE: Method of electrochemical mechanical planarization

DATE-ISSUED: September 15, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Uzoh; Cyprian Emeka	Hopewell Junction	NY	N/A	N/A
Harper; James McKell Edwin	Yorktown Heights	NY	N/A	N/A

US-CL-CURRENT: 451/41; 451/286, 451/5, 451/60

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ **33. Document ID: US 5733171 A**

L9: Entry 33 of 46

File: USPT

Mar 31, 1998

US-PAT-NO: 5733171  
DOCUMENT-IDENTIFIER: US 5733171 A

TITLE: Apparatus for the in-process detection of workpieces in a CMP environment

DATE-ISSUED: March 31, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Allen; Robert F.	Gilbert	AZ	N/A	N/A
Holzapfel; Paul	Chandler	AZ	N/A	N/A
Bartels; Anthony L.	Phoenix	AZ	N/A	N/A
Lin; Warren	Fremont	CA	N/A	N/A

US-CL-CURRENT: 451/5; 451/41, 451/6, 451/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw Desc	Image
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☐ 34. Document ID: US 5730642 A

L9: Entry 34 of 46

File: USPT

Mar 24, 1998

US-PAT-NO: 5730642  
DOCUMENT-IDENTIFIER: US 5730642 A

TITLE: System for real-time control of semiconductor wafer polishing including optical monitoring

DATE-ISSUED: March 24, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sandhu; Gurtej S.	Boise	ID	N/A	N/A
Doan; Trung Tri	Boise	ID	N/A	N/A

US-CL-CURRENT: 451/6; 451/2, 451/285, 451/286, 451/287, 451/288, 451/289, 451/41

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw Desc	Image
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☐ 35. Document ID: US 5708506 A

L9: Entry 35 of 46

File: USPT

Jan 13, 1998

US-PAT-NO: 5708506  
DOCUMENT-IDENTIFIER: US 5708506 A

TITLE: Apparatus and method for detecting surface roughness in a chemical polishing pad conditioning process

DATE-ISSUED: January 13, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Birang; Manoocher	Los Gatos	CA	N/A	N/A

US-CL-CURRENT: 356/600; 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 36. Document ID: US 5698455 A

L9: Entry 36 of 46

File: USPT

Dec 16, 1997

US-PAT-NO: 5698455

DOCUMENT-IDENTIFIER: US 5698455 A

TITLE: Method for predicting process characteristics of polyurethane pads

DATE-ISSUED: December 16, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meikle; Scott G.	Boise	ID	N/A	N/A
Hudson; Guy F.	Boise	ID	N/A	N/A

US-CL-CURRENT: 438/8; 436/172, 438/16, 438/692, 451/56

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 37. Document ID: US 5695660 A

L9: Entry 37 of 46

File: USPT

Dec 9, 1997

US-PAT-NO: 5695660

DOCUMENT-IDENTIFIER: US 5695660 A

TITLE: Optical techniques of measuring endpoint during the processing of material layers in an optically hostile environment

DATE-ISSUED: December 9, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Litvak; Herbert E.	Cupertino	CA	N/A	N/A

US-CL-CURRENT: 216/85; 216/89

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 38. Document ID: US 5667424 A

L9: Entry 38 of 46

File: USPT

Sep 16, 1997

US-PAT-NO: 5667424  
DOCUMENT-IDENTIFIER: US 5667424 A

TITLE: New chemical mechanical planarization (CMP) end point detection apparatus

DATE-ISSUED: September 16, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pan; Yang	Singaporee	N/A	N/A	SGX

US-CL-CURRENT: 451/6; 451/285, 451/286, 451/287, 451/288, 451/289, 451/290,  
451/41, 451/5, 451/9

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 39. Document ID: US 5658183 A

L9: Entry 39 of 46

File: USPT

Aug 19, 1997

US-PAT-NO: 5658183  
DOCUMENT-IDENTIFIER: US 5658183 A

TITLE: System for real-time control of semiconductor wafer polishing including optical monitoring

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sandhu; Gurtej S.	Boise	ID	N/A	N/A
Doan; Trung Tri	Boise	ID	N/A	N/A

US-CL-CURRENT: 451/5; 250/559.27, 250/559.28, 356/630, 451/287, 451/288, 451/289,  
451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 40. Document ID: US 5640242 A

L9: Entry 40 of 46

File: USPT

Jun 17, 1997

**WEST**[Generate Collection](#)**Search Results - Record(s) 41 through 46 of 46 returned.**☐ 41. Document ID: US 5499733 A

L9: Entry 41 of 46

File: USPT

Mar 19, 1996

US-PAT-NO: 5499733

DOCUMENT-IDENTIFIER: US 5499733 A

TITLE: Optical techniques of measuring endpoint during the processing of material layers in an optically hostile environment

DATE-ISSUED: March 19, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Litvak; Herbert E.	Cupertino	CA	N/A	N/A

US-CL-CURRENT: 216/38; 216/60, 216/85, 216/88, 216/89

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 42. Document ID: US 5439551 A

L9: Entry 42 of 46

File: USPT

Aug 8, 1995

US-PAT-NO: 5439551

DOCUMENT-IDENTIFIER: US 5439551 A

TITLE: Chemical-mechanical polishing techniques and methods of end point detection in chemical-mechanical polishing processes

DATE-ISSUED: August 8, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meikle; Scott	Boise	ID	N/A	N/A
Doan; Trung T.	Boise	ID	N/A	N/A

US-CL-CURRENT: 438/5; 216/84, 438/14, 438/692

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 43. Document ID: US 5433651 A

L9: Entry 43 of 46

File: USPT

Jul 18, 1995

US-PAT-NO: 5433651  
DOCUMENT-IDENTIFIER: US 5433651 A

TITLE: In-situ endpoint detection and process monitoring method and apparatus for chemical-mechanical polishing

DATE-ISSUED: July 18, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lustig; Naftali E.	Croton-on-Hudson	NY	N/A	N/A
Saenger; Katherine L.	Ossining	NY	N/A	N/A
Tong; Ho-Ming	Yorktown Heights	NY	N/A	N/A

US-CL-CURRENT: 451/6; 216/88, 438/16, 438/693

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	RVWC	Draw Desc	Image
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☐ 44. Document ID: US 5413941 A

L9: Entry 44 of 46

File: USPT

May 9, 1995

US-PAT-NO: 5413941  
DOCUMENT-IDENTIFIER: US 5413941 A

TITLE: Optical end point detection methods in semiconductor planarizing polishing processes

DATE-ISSUED: May 9, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koos; Daniel A.	Boise	ID	N/A	N/A
Meikle; Scott	Boise	ID	N/A	N/A

US-CL-CURRENT: 438/16; 451/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	RVWC	Draw Desc	Image
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☐ 45. Document ID: WO 9803305 A1, US 5733171 A, US 5823853 A, TW 343358 A, GB 2330200 A, DE 19781881 T, US 5961369 A, US 5993289 A, JP 2000505003 W, GB 2330200 B, GB 2349214 A, GB 2349214 B

L9: Entry 45 of 46

File: DWPI

Jan 29, 1998

DERWENT-ACC-NO: 1998-120550  
DERWENT-WEEK: 200103  
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TITLE: Detection apparatus for chemical=mechanical polishing process - has tungsten halogen light source directing input light signal at surface of polishing pad with processor including photodetector to convert captured signal into analogue electrical signal

INVENTOR: ALLEN, R F; BARTELS, A L ; HOLZAPFEL, P ; LIN, W

PRIORITY-DATA: 1997US-0781132 (January 9, 1997), 1996US-0683150 (July 18, 1996), 1998US-0090666 (June 4, 1998), 1998US-0035319 (March 5, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9803305 A1	January 29, 1998	E	033	B24B037/04
US 5733171 A	March 31, 1998	N/A	011	B24B049/04
US 5823853 A	October 20, 1998	N/A	000	B24B049/00
TW 343358 A	October 21, 1998	N/A	000	H01L021/304
GB 2330200 A	April 14, 1999	N/A	000	B24B049/04
DE 19781881 T	September 2, 1999	N/A	000	B24B037/04
US 5961369 A	October 5, 1999	N/A	000	B24B049/00
US 5993289 A	November 30, 1999	N/A	000	B24B049/04
JP 2000505003 W	April 25, 2000	N/A	039	B24B037/04
GB 2330200 B	September 27, 2000	N/A	000	B24B049/04
GB 2349214 A	October 25, 2000	N/A	000	B24B049/04
GB 2349214 B	December 20, 2000	N/A	000	B24B049/04

INT-CL (IPC): B24B 37/04; B24B 49/00; B24B 49/04; B24B 49/12; G05B 19/4065; H01L 21/304; H01L 21/66

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Clip Img	Image
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☐ 46. Document ID: SG 66369 A1, US 5667424 A

L9: Entry 46 of 46

File: DWPI

Jul 20, 1999

DERWENT-ACC-NO: 1997-469844  
DERWENT-WEEK: 199936  
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TITLE: Chemical mechanical end point detector - has light source with beam impinging on workpiece carrier and beam position sensor producing signal for calculating circuit to determine end point of polishing

INVENTOR: PAN, Y

PRIORITY-DATA: 1996US-0719346 (September 25, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
SG 66369 A1	July 20, 1999	N/A	000	B24B049/00
US 5667424 A	September 16, 1997	N/A	009	B24B049/00

INT-CL (IPC): B24B 49/00